UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

February 3, 2022

Mr. Prakash Narayanan
Chief Technical Officer
TN Americas LLC
7160 Riverwood Drive, Suite 200
Columbia, MD 21046

SUBJECT: PROPOSED ALTERNATIVE TO THE ASME CODE, NG-4230 TACK WELDS FOR RENEWED CERTIFICATE OF COMPLIANCE NO. 1004, AMENDMENT NOS. 13 REVISION 1 AS CORRECTED, 14, 15, 16 and 17 (DOCKET NO. 72-1004, CAC NO. 001028, EPID: L-2021-LLR-0069)

Dear Mr. Narayanan:

The purpose of this letter is to communicate the U.S. Nuclear Regulatory Commission (NRC) approval of your request to use an alternative to American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section III, Division I, Subsection NG, Subparagraph NG-4230.1, for tack welds which states, "When tack welds are to become part of the finished weld, they shall be visually examined in accordance with NG-5261 and defective tack welds removed" for R45 Transition Rails of the Standardized NUHOMS® 61 BTH Type 2 dry shielded canister (DSC).

By letter dated September 10, 2021 (Agencywide Documents Access and Management System [ADAMS] Accession No. ML21253A105), as supplemented by letters dated November 19, 2021 (ADAMS Accession Number ML21323A057), and December 22, 2021 (ADAMS Accession Number ML21356A032), TN Americas LLC (TN) requested an alternative to the ASME Code for the use of a qualified inspector for visual examination for identification of defective tack welds for R45 Transition Rails of the Standardized NUHOMS® 61 BTH Type 2 DSC. In accordance with the identical provision cited for each Certificate of Compliance (CoC) No. 1004 amendment listed below, TN requests an alternative to the ASME B&PV Code, Section III, Division 1, Subsection NG, Article NG-4000 for Visual Examination requirements of tack welds of the NUHOMS® 61BTH Type 2 Dry Shielded Canister (DSC), R45 transition rails, for each of the cited amendments below:

- Paragraph 4.2.4 of CoC No. 1004 Appendix A, NUHOMS® System Generic Technical Specifications (TS), Renewed Amendment No. 13, Revision 1, as corrected (ADAMS Accession Number ML18018A103)
- Paragraph 4.2.4 of CoC No. 1004 Appendix A, TS, Renewed Amendment No. 14 (ADAMS Accession Number ML17338A120)
- Paragraph 4.2.4 of CoC No. 1004 Appendix A, TS, Renewed Amendment No. 15 (ADAMS Accession Number ML18347B336)
- Condition II.1.d of CoC No. 1004, Renewed Amendment No. 16 (ADAMS Accession Number ML20230A318)
- Condition II.1.d of CoC No. 1004, Renewed Amendment No. 17 (ADAMS Accession Number ML21109A328)

The alternative is requested only for the weld joints of the R45 transition rails between parts 1 and 2 and their alternates (e.g., 1A, 1B and 2A) of updated final safety analysis report Drawing NUH61BTH-2003-SAR, Revision 2. No other components of the basket assembly are included.

As stated in the CoC or TS for the amendments referenced above, proposed alternatives to the ASME Code may be used when the proposed alternatives are authorized by the Director of the Office of Nuclear Material Safety and Safeguards, or designee. The TS or CoC, as applicable, also state that the applicant's request should demonstrate that the proposed alternative provides an acceptable level of quality and safety, or compliance with the specified requirements would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

TN stated their belief is that the intent of this part of the ASME Code is to ensure that the welds do not contain defects from a defective tack weld and use of a qualified inspector provides that assurance. TN stated that the qualified welding process will demonstrate production of a final weld with acceptable level of quality and safety, hence eliminating the need for a qualified inspector to perform the Visual Examination on tack welds per NG-4231.1.

TN's proposed alternative when omitting Visual Examination for tack welds of R45 Transition Rails of the Standardized NUHOMS® 61 BTH Type 2 DSC is to have the welder or weld supervisor check the tack welds for defects and either remove or repair the defective tack weld in the process of fit-up and alignment. In addition, TN stated that a weld procedure qualification record (PQR) will be used to demonstrate that a defective tack weld can be fully consumed during the production weld root pass resulting in a final weld with acceptable quality and mechanical properties.

TN provided details on the established quality controls/hold-points that are in place for visual examination by a welder or welding supervisor to ensure that tack welds are satisfactory prior to commencement of root welding. TN stated that all defective tack welds are either removed or repaired manually before the part is deemed ready for root pass welding. In addition to tack welds, TN uses rigid custom fixtures that constrain the parts in optimal configuration and even if tack or tack welds are broken and not identified by the welder or welding supervisor, the rigid fixture will keep the parts in correct position during the root pass welding process. The NRC staff determined that the use of rigid fixtures will keep the parts secure such that a root gap can be maintained even with broken tack weld(s).

Additionally, TN explained that the weld operator for the automated or mechanized welding process will adhere to all welding procedure specification (WPS) requirements including root gap dimensions. TN believes that the scenario where broken tack welds are not identified for repair or removal during the fit-up process ahead of root pass welding is unlikely because it would involve the failure of multiple controls. The NRC staff determined that the verification of root gap dimensions by the weld operator is another step that ensures the quality of the final weld.

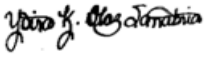
TN provided details about qualification of a WPS which will be supported by a PQR using three mock-up coupons with a broken tack weld representing each joint geometry. TN stated they shall prepare an additional PQR in accordance with ASME Section IX using mock-up coupons with three broken tacks per coupon at fit-up and these coupons will be tested in accordance with

the applicable requirements of ASME Section IX. TN's intent in welding defective tack welds on the mock-up coupons is to demonstrate that the final weld has acceptable mechanical strength after incorporating a broken tack weld. The NRC staff determined that TN's qualification of the welding procedure on coupons with broken tack welds provides another level of assurance that if a broken tack weld is missed at multiple quality control checks, the welding process will consume the entire work resulting in a weld with acceptable mechanical properties.

The NRC staff also notes that this proposed alternative is only for tack welds on this component, and TN made it clear that the inspections of the final weld will be performed by a qualified inspector. The final inspection by the qualified inspector confirms that welding of this component is per engineering specifications. Based on the discussion above, the NRC staff concludes that the proposed alternative is acceptable for the cited amendments in this letter, because it provides an acceptable level of quality and safety.

If you have any questions regarding this matter, please contact Christian Jacobs, of my staff, at 301-415-6825, or christian.jacobs@nrc.gov. Please reference the EPID number above in any correspondence related to this action.

Sincerely,



Signed by Diaz-Sanabria, Yoira
on 02/03/22

Yoira Diaz Sanabria, Chief
Storage and Transportation Licensing Branch
Division of Fuel Management
Office of Nuclear Material Safety
and Safeguards

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